Notice of Allowability	Application No.	Applicant(s)	
	10/083,418	CLARK ET AL.	
	Examiner	Art Unit	
	Benjamin A. Ailes	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *2/15/06*.

2. ☒ The allowed claim(s) is/are *2-13 and 15-27*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Reasons for Allowance

1. The following is an examiner's statement of reasons for allowance: the prior art of record failed to teach or suggest the time-distributed load balancing system utilizing a message distribution rule requiring transfer of a message to a selected one of a plurality of server computer platforms wherein said time associated with the message falls within a corresponding one of a plurality of pre-determined time spans and said time associated with said message includes a value for a first unit of time and value for a second unit of time wherein the plurality of pre-determined time spans encompasses a contiguous range of values for said second unit of time.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael W. Piper (Reg. No. 39,800) on May 8, 2006.

3. Please amend the claims as noted below under the heading "LISTING OF THE CLAIMS".

LISTING OF THE CLAIMS

1. (Cancelled)

2. (Currently Amended) The distributed processing ~~environment~~ system of claim 3, wherein said time associated with said message is an arrival time for said message at said messaging service residing at said client computer platform.

3. (Currently Amended) A distributed processing ~~environment~~ system, comprising:

a client computer platform;

a plurality of server computer platforms, each one of said plurality of server computer platforms having an instance of an application residing thereon;

a messaging system for controlling the exchange of messages between said client computer platform and said plurality of server computer platforms, said messaging system including messaging services residing at said client computer platform and each one of said plurality of server computer platforms; and

a time-distributed load balancing system residing at said client computer platform, said time-distributed load balancing system determining, for a message to be transferred to said application by said messaging system, which one of said plurality of server computer platforms is to receive said message based upon a time associated with said message and at least one message distribution rule requiring transfer of said message to a selected one of said plurality of server computer platforms if said time associated with said message falls within a corresponding one of a plurality of pre-determined time spans;

said time associated with said message includes a value for a first unit of time and a value for a second unit of time; and

each one of said plurality of pre-determined time spans encompassing a contiguous range of values for said second unit of time.

4 (Currently Amended) The distributed processing ~~environment~~ system of claim 3, wherein:

using said at least one message distribution rule, said time-distributed load balancing system divides said first unit of time into said plurality of pre-determined time spans and associates each one of said plurality of pre-determined time spans to said corresponding one of said plurality of server computer platforms; and

said time-distributed load balancing system determining which of said plurality of server computer platforms is to receive said message based upon which, of said plurality of

pre-determined time spans, said value of said second unit of time associated with said message falls within.

5. (Currently Amended) The distributed processing ~~environment~~ system of claim 4, wherein said first unit of time is minutes and said second unit of time is seconds.

6. (Currently Amended) The distributed processing ~~environment~~ system of claim 5, wherein said time associated with said message is an arrival time for said message at said messaging service residing at said client computer platform.

7. (Currently Amended) The distributed processing ~~environment~~ system of claim 4, wherein said time-distributed load balancing system residing at said client computer platform further comprises:

a data file for maintaining a list of said plurality of server computer platforms, said pre-determined time span associated with each one of said plurality of server computer platforms and said contiguous range of values for said second unit of time encompassed by said pre-determined time span associated with each one of said plurality of server computer platforms; and

a software application which implements said at least one message distribution rule by determining which one of said plurality of server computer platforms is to receive said message by comparing said value of said second unit of time associated with said message to said contiguous range of values encompassed by each one of said plurality of pre-determined time spans maintained in said data file.

8. (Currently Amended) The distributed processing ~~environment~~ system of claim 7, wherein said software application resides within said messaging service residing at said client computer platform.

9. (Currently Amended) The distributed processing ~~environment~~ system of claim 7 wherein:

said client computer platform is a mainframe computer system;

each one of said plurality of server computer platforms is a mid-range server computer system; and

said messaging services residing at said client computer platform and each one of said server computer platforms are asynchronous messaging services which enable the exchange of messages between a mainframe computer systems and a mid-range server computer system.

10. (Currently Amended) The distributed processing ~~environment~~ system of claim 9, wherein said first unit of time is one minute and said second unit of time is seconds.

11. (Currently Amended) The distributed processing ~~environment~~ system of claim 10, wherein said plurality of pre-determined time spans further comprises:

a first time span which extends between 0 and 20 seconds;

a second time span which extends between 21 and 40 seconds; and

a third time span which extends between 41 and 60 seconds.

12. (Currently Amended) The distributed processing ~~environment~~ system of claim 10, wherein said time associated with said message is an arrival time for said message at said message at said messaging service for said client computer platform.

13. (Currently Amended) The distributed processing ~~environment~~ system of claim 12, wherein said software application resides within said messaging service residing at said client computer platform.

14. (Cancelled)

15. (Currently Amended) A distributed processing ~~environment~~ system, comprising:

a client computer platform;

a plurality of server computer platforms, each one of said plurality of server computer platforms having an instance of an application residing thereon;

a messaging system for controlling the exchange of messages between said client computer platform and said plurality of server computer platforms, said messaging system including messaging services residing at said client computer platform and each one of said plurality of server computer platforms;

a time-distributed load balancing and failover system residing at said client computer platform, said time-distributed load balancing and failover system determining, for a message to be transferred to said application by said messaging system, which one of said plurality of server computer platforms is to receive said message based upon a time associated with said message, at least one message distribution rule requiring transfer of said message to a selected one of said plurality of server computer platforms if said time associated with said message falls within a corresponding one of a plurality of pre-determined time spans and at least one failover rule requiring transfer of said message to a subsequent one of said plurality of server computer platforms associated with a subsequent one of said plurality of pre-determined time spans if said selected server computer platform has failed;

said time associated with said message includes a value for a first unit of time and a value for a second unit of time; and

each one of said plurality of pre-determined time spans encompassing a contiguous range of values for said second unit of time.

16. (Currently Amended) The distributed processing ~~environment~~ system of claim 15, wherein:

using said at least one message distribution rule, said time-distributed load balancing failover system divides said first unit of time into said plurality of pre-determined time spans, associated each one of said plurality of pre-determined time spans with a corresponding one of said server computer platforms and arranges said plurality of pre-determined time spans into a self-repeating sequence

said time distributed load balancing and failover system determining which of said plurality of server computer platforms is to receive said message based upon which one, of said plurality of pre-determined time spans, said value of said second unit of time associated with said message falls within

using said at least one failover rule, if said server computer platform associated with said pre-determined time span within which said value of said second unit of time associated with said message falls within has failed, said time distributed load balancing and failover system selecting, as said subsequent server computer platform to receive said message, said server computer platform associated with a next pre-determined time span in said self-repeating sequence of said pre-determined time spans.

17. (Currently Amended) The distributed processing ~~environment~~ system of claim 16, wherein said first unit of time is one minute and said second unit of time is seconds.

18. (Currently Amended) The distributed processing ~~environment~~ system of claim 17, wherein said time associated with said message is the arrival time for said message at said messaging service residing at said client computer platform.

19. (Currently Amended) The distributed processing ~~environment~~ system of claim 16, wherein said time-distributed load balancing and failover system residing at said client computer platform further comprises:

a data file for maintaining a list of said plurality of server computer platforms, said predetermined time span associated with each one of said plurality of server computer platforms, said contiguous range of values for said second unit of time encompassed by said pre-determined time span associated with each one of said plurality of server computer platforms and a mark indicating which ones of said plurality of server computer platforms have failed; and

a software application which implements said at least one message distribution rule by determining which one of said plurality of server computer platforms is to receive said message by comparing said value of said second unit of time associated with said message to said contiguous range of values encompassed by each one of said plurality of pre-determined time spans maintained in said data file.

10. (Currently Amended) The distributed processing ~~environment~~ system of claim 19, wherein said software application implements said at least one failover rule by determining that, if said server computer platform associated with said pre-determined time span within which said value of said second unit of time associated with said message falls within has failed, said server computer platform associated with said next

pre-determined time span in said self-repeating sequence of said pre-determined time spans is to receive said message.

21. (Currently Amended) The distributed processing ~~environment~~ system of claim 20, wherein said first unit of time is one minute and said second unit of time is seconds.

22. (Currently Amended) The distributed processing ~~environment~~ system of claim 21, wherein said time associated with said message is the arrival time for said message at said messaging service residing at said client computer platform.

23. (Currently Amended) A distributed processing ~~environment~~ system, comprising:

a client computer platform;

a plurality of server computer platforms coupled to said client computer platform;

an asynchronous messaging system for controlling the exchange of messages between said client computer platform and said plurality of server computer platforms, said asynchronous messaging system including asynchronous messaging services residing at said client computer platform and each one of said plurality of server computer platforms;

at least two instances of each one of a plurality of applications distributed among said plurality of server computer platforms, said at least two instances of each one of said plurality of applications residing at respective ones of said plurality of server computer platforms;

a plurality of data files residing at said client computer platform, each one of said plurality of data files corresponding to one of said plurality of applications;

each one of said plurality of data files maintaining:

a lit of each one of said at least two instances of said corresponding one of said plurality of applications and said respective ones of said plurality of server computer platforms on which they reside; and

a pre-determined time span assigned to each one of said at least two instances of said corresponding one of said plurality of applications and said respective ones of said server computer platforms on which they reside, for each of said respective ones of said plurality of server computer platforms, said pre-determined time spans assigned to said corresponding one of said plurality of applications arranged in a self-repeating sequence, collectively comprise a first unit of tie and respectively encompass a contiguous range of values for a second unit of time; and

a load balancing and failover software application residing at said client computer platform;

for each message to be delivered to a first one of said plurality of applications distributed among said plurality of server computer platforms, said load balancing and failover software application:

determining an arrival time of said message at said asynchronous messaging service of said client computer platform, said arrival time of said message including a first value for said first unit of time and a second value for said second unit of time; and

selecting, as said server computer platform to receive said message, said server computer platform corresponding to said pre-determined span of time assigned to said instance of said application for which said second value for said arrival time falls within said contiguous range of values.

24. (Currently Amended) The distributed processing ~~environment~~ system of claim 23, wherein:

each one of said data files further maintains an indication as to whether each one of said at least two instances of said corresponding one of said plurality of applications has failed;

for each message to be delivered to said first one of said distributed applications, said load balancing and failover software application:

determining, from said list, if said selected server computer platform has failed; and

if said selected server computer platform has failed, selecting, as a substitute server computer platform, said server computer platform associated with a next pre-determined time span in said self-repeating sequence of said pre-determined time spans;

repeating said determining and selecting actions until said selected computer platform is not determined to have failed or until all of said server computer platforms have been selected and determined to have failed.

25. (Currently Amended) The distributed processing ~~environment~~ system of claim 24, wherein, for each re-registration of one of said plurality of server computer

platforms with said asynchronous messaging system residing at said client computer platform, said load balancing and failover software application removing said failure indication from each of said listed instances of said plurality of applications residing on said re-registering server computer platform.

26. (Currently Amended) The distributed processing ~~environment~~ system of claim 25, and further comprising:

a synchronous messaging service residing on each one of said plurality of server computer platforms, said synchronous messaging service handling the exchange of messages between said asynchronous messaging service residing on said server computer platform and said instances residing on said server computer platform;

said asynchronous messaging service reporting first and second types of responses from said server computer platform selected to receive said message, said first type of message confirming receipt of said message by said messaging service at said selected server and said second type of message confirming receipt of a response to said message;

said load balancing and failover software application:

determining, upon failing to receive said first type of message within a pre-selected period, that all said instances of said plurality of applications residing at said selected server computer system have failed; and

determining, upon failing to receive said second type of message within said pre-selected time period, that said selected instance of said application residing at said selected server computer system has failed.

27. (Currently Amended) The distributed processing ~~environment~~ system of claim 25, and further comprising:

a synchronous messaging service residing on each one of said plurality of server computer platforms, said synchronous messaging service handling the exchange of messages between said asynchronous messaging service residing on said server computer platform and said instances residing on said server computer platform;

said asynchronous messaging service reporting first and second types of responses from said server computer platform selected to receive said message, said first type of message confirming receipt of said message by said messaging service at said selected server and said second type of message confirming receipt of a response to said message;

said load balancing and failover software application:

determining, upon failing to receive said first type of message within a pre-selected period, that all said instances of said plurality of applications residing at said selected server computer system have failed; and

determining, upon failing to receive said second type of message within said pre-selected time period, that said selected instance of said application residing at said selected server computer system have failed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin A. Ailes whose telephone number is (571)272-3899. The examiner can normally be reached on M-F 6:30-4, IFP Work Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571)272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BEATRIZ PRIETO
PRIMARY EXAMINER

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